Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A composition, comprising:

a matrix functionality capable of providing an adhesive bond to an electrically conductive surface and an electrolyte functionality providing sufficient ionic conductivity to said composition so that, when said matrix functionality forms said adhesive bond to said electrically conductive surface, said composition can support a faradic reaction at said electrically conductive surface, said faradic reaction weakening said adhesive bond,

wherein, when said matrix functionality forms said adhesive bond to said electrically conductive surface, said adhesive bond has a shear strength greater than 200 psi.

2. (Original) The composition of claim 1, wherein said matrix functionality is provided by a polymer.

3. (Original) The composition of claim 2, wherein said polymer is selected from the group consisting of epoxies, phenolics, acrylics, melamines, maleimides, and polyurethanes and combinations thereof.

4. (Original) The composition of claim 2, wherein said polymer has a variable crosslink density to form regions of low crosslink density having a relatively high ionic conductivity and regions of high crosslink density having a relatively high mechanical strength.

5. (Original) The composition of claim 2, wherein said polymer includes coordination sites that are capable of solvating ions and that support the electrolyte functionality of said composition.

6. (Original) The composition of claim 5, wherein said coordination sites are selected from the group consisting of alkoxy moieties, disulfide moieties, thioalkyl moieties, nitrile moieties, and polyvinylidene fluoride moieties and derivatives thereof.

7. (Original) The composition of claim 1, wherein said electrolyte functionality is provided in said composition by an electrolyte additive selected from the group consisting of ion solvating molecules, oligomers and polymers, and ionomers.

8. (Original) The composition of claim 1 or 7, wherein said electrolyte functionality is localized in regions within said polymer to form a secondary phase with ionic conductivity.

9. (Original) The composition of claim 1, wherein said electrochemically disbondable composition is a phase separated material having first regions of substantially matrix functionality and second regions of substantially electrolyte functionality

10. (Original) The composition of claim 9, wherein said first regions comprise a polymer.

11. (Original) The composition of claim 10, wherein said polymer is selected from the group consisting of epoxies, phenolics, acrylics, melamines, maleimides, and polyurethanes and combinations thereof.

12. (Original) The composition claim 2 or 11, wherein said polymer comprises epoxy.

13. (Original) The composition of claim 9, wherein said second regions are selected from the group consisting of ion solvating molecules, oligomers, and polymers and copolymer blocks thereof, and ionomers.

14. (Original) The composition of claim 13, wherein said ion solvating molecule is selected from the group consisting of low molecular weight alkoxides, alcohols, alkyl carbonates, cyclic esters, nitriles, amides and ureas.

15. (Original) The composition of claim 9, wherein said phase separated material comprises a block or graft copolymer containing non-polar components and components of ionic conductivity.

16. (Original) The composition of claim 15, wherein said non-polar component of said block copolymer is selected to have a low affinity for said matrix functionality of said composition to facilitate phase separation.

17. (Original) The composition of claim 1, further comprising a reservoir for containing curing or crosslinking agent.

18. (Original) The composition of claim 17, wherein the reservoir is selected from the group consisting of zeolites, clays and polymer gels.

19. (Original) The composition of claim 1 or 9, wherein said electrolyte functionality includes a salt capable of being solvated into said composition.

20. (Original) The composition of claim 19, wherein said salt is selected from the group consisting of alkali metal, alkaline earth and ammonium salts.

21. (Original) The composition of claim 19, wherein said salts include an anion selected from the group consisting of hexafluorophosphate, tetrafluoroborate, hexafluoroantimonate and perchlorate.

22. (Original) The composition of claim 19, wherein said salt is an ammonium salt and the ammonium cation is immobilized in said composition.

23. (Previously Presented) The composition of claim 1 or 9, wherein said composition has an ionic conductivity in the range of 10^{-11} S/cm to 10^{-5} S/cm.

24. (Previously Presented) The composition of claim 1 or 9, wherein said composition has an ionic conductivity in the range of 10^{-9} S/cm to 10^{-7} S/cm.

25. (Original) The composition of claim 1 or 9, further comprising an additive selected from the group consisting of pigments, corrosion inhibitors, leveling agents, gloss promoters, rubber toughening and fillers.

26. (Original) The composition of claim 1 or 9, wherein said composition is an adhesive.

27. (Original) The composition of claim 26, wherein said adhesive composition has a shear strength with a surface of at least 200 psi.

28. (Original) The composition of claim 1 or 9, wherein said composition is a coating.

29. (Original) The composition of claim 28, wherein said coating is resistant to delamination from a substrate to which it is applied.

30. (Previously Presented) A composition, comprising:

a curable polymeric material; and

an electrolyte located in said curable polymeric material,

wherein said curable polymeric material, when cured, can form adhesive bonds with an electrically surface, said adhesive bonds having a shear strength of greater than 200 psi, and said composition has sufficient ionic conductivity to support a faradic reaction at said electrically conductive surface, said faradic reaction weakening said adhesive bonds.

31. (Previously Presented) The composition of claim 30, wherein said curable polymeric material is selected from the group consisting of epoxy resins, phenolic resins, acrylic resins, melamine resins, maleimide resins and urethanes.

32. (Original) The composition of claim 30, wherein the composition phase separates upon curing, said phase separated material having first regions of mechanical strength and second regions of ionic conductivity.

33. (Cancelled).

34. (Currently Amended) A bonded structure, comprising:

a first material layer having an electrically conductive surface;

a second material layer having an electrically conductive surface; and

a composition disposed between the electrically conductive surface of the first material layer and the electrically conductive surface of the second material layer, the composition, comprising:

a matrix functionality; and

an electrolyte functionality,

wherein:

the matrix functionality forms an adhesive bond to the electrically conductive surface of the first material layer, ~~and~~

the electrolyte functionality provides sufficient ionic conductivity to the composition so that the composition can support a faradic reaction at the electrically conductive surface of the first material layer, the faradic reaction weakening said adhesive bond; and

the adhesive bond has a shear strength of greater than 200 psi.

35. (Original) The bonded structure of claim 34, wherein at least one of said conductive surfaces is an article to be secured by said bond.

36. (Original) The bonded structure of claim 34, wherein at least one of said electrically conductive surfaces comprises a conductive element selected from the group consisting of sheets, foils, grids and meshes.

37. (Original) the bonded structure of claim 35, wherein at least one of said electrically conductive surfaces comprises a conductive element selected from the group consisting of sheets, foils, grids and meshes.

38. (Original) The bonded structure of claim 36, wherein said conductive element further is bonded to an article using an adhesive.

39. (Cancelled).

40. (Previously Presented) The bonded structure of claim 34, wherein at least one of said first and second material layers is an electrically conductive coating applied to a substrate.

41. (Previously Presented) The bonded structure of claim 36, wherein at least one of said first and second material layers is an electrically conductive coating applied to a substrate.

42-61. (Cancelled).

62. (Previously Presented) The bonded structure of claim 34, further comprising an electrically conductive element between the first and second material layers.

63. (Previously Presented) The bonded structure of claim 34, wherein the first material layer comprises an electrically conductive element selected from the group consisting of foils, sheets, meshes and grids.

64. (Previously Presented) The bonded structure of claim 63, wherein the second material layer comprises an electrically conductive element selected from the group consisting of foils, sheets, meshes and grids.

65. (Previously Presented) The bonded structure of claim 34, wherein the second material layer comprises an electrically conductive element selected from the group consisting of foils, sheets, meshes and grids.

REMARKS

Applicant has cancelled claims 33 and 42-61, and amended claims 1 and 34. Claims 1-32, 34-38, 40, 41 and 62-65 are presented for examination.

Applicant acknowledges with appreciation the courtesy extended by Examiners Zirker and Chang in providing an interview on April 22, 2003.

The Examiner rejected claims 1-32, 34-38, 40, 41 and 60-65 under 35 U.S.C. §112, first paragraph as purportedly being based on a disclosure which is not enabling, and under 35 U.S.C. §112, second paragraph as purportedly being indefinite.

Respectfully, Applicant finds the rejections very difficult to understand because the Examiner seems to be confusing the different statutory requirements. As an example, under the paragraph one rejection, the Examiner stated that the claims "give no notice as to what compositions might infringe the claim[s]" and refers to the claims as reciting "vague" functionalities. Applicant notes that the "notice" function of the claims is served by the second paragraph, not the first paragraph, of the statute. In addition, the Examiner cited obscure caselaw out of context for the purpose of supporting general propositions which are not as broad as the Examiner seems to think they are. Applicant therefore respectfully requests clarification of the rejections under 35 U.S.C. §112 if the rejections are to be maintained.

Regarding the enablement rejection, as stated by the United States Court of Appeals for the Federal Circuit is Process Control Corp. v. Hydreclaim Corp., 190 F.3d 1350:

> The enablement requirement of 35 U.S.C. §112, ¶ one requires that the specification adequately discloses to one skilled in the relevant art how to make, or in the case of a process, how to carry out, the claimed invention without undue experimentation.

Here, it is clear that one skilled in the art could readily make and use the invention without undue experimentation. The specification includes more than 20 pages of discussion regarding many different examples of Applicant's claimed compositions, as well as methods of making the compositions. Moreover, the specification includes 12 different specific examples of

Applicant's claimed compositions and their methods of preparation. Thus, it is apparent that the specification satisfies the enablement requirement with respect to the claims, and so Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph.

Regarding the indefiniteness rejection, Applicant reminds the Examiner of the appropriate legal standard for satisfying 35 U.S.C. §112, second paragraph. In Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986) the United States Court of Appeals for the Federal Circuit stated:

> A decision whether a claim is invalid under §112, 2d paragraph, requires a determination of whether those skilled in the art would understand what is claimed when read the claim is read in light of the specification.

Here, one skilled in the art would clearly understand the claims when read in light of the specification. As an example, the Examiner stated that independent claims 1, 30 and 34 recite "vague 'functionalities'". However, the "functionalities" required by the claims are explicitly defined in the application at page 4, and one skilled in the art would understand what the "functionalities" cover after reading the specification. As another example, the Examiner stated that "the Examiner believes" that there should be certain limitations in the claims. Respectfully, what "the Examiner believes" is not the legal standard. The Examiner must demonstrate some legitimate basis to support the position that, even after reading the specification, one skilled in the art would not understand what the claims cover unless the claims recite the particular limitations suggested by the Examiner. Moreover, while the Examiner seems to indicate that there is some *per se* prohibition against using functional language in claims, Applicant respectfully notes that such a broad proposition is simply not supported by the caselaw. See, e.g., id. Accordingly, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

The Examiner also rejected claims 1-32, 34-38, 40, 41 and 60-65 under 35 U.S.C. §103 as being unpatentable over Moulton.

Moulton is directed to electrically conducting adhesion promoters for enhancing the adhesion of composite electrodes onto conductive foils useful as current collectors. (Moulton col. 1, lines 11-15). The articles disclosed by Moulton essentially contain a three layer combination of a foil and a composite electrode with an adhesive material therebetween. (See, e.g., id. col. 3, lines 20-55). Apparently, Moulton's adhesive can form an adhesive bond, but some sort of adhesive does not contain an electrolyte. (Id. col. 5, line 8-col. 7, line 2). Moreover, while Moulton's electrode can be a composite cathode that contains a polymer and a salt, this material does not appear to be capable of forming an adhesive bond to an electrically conductive surface. (Id. col. 8, lines 13-17). In short, nowhere does Moulton disclose a material that can form an adhesive bond having a shear strength of greater than 200 psi and that also has sufficient ionic conductivity to support a faradic reaction at an electrically conductive surface, where the faradic reaction weakens the adhesive bond. Thus, Moulton does not explicitly disclose Applicant's claimed compositions.

Nor has the Examiner met the appropriate standard to demonstrate that Moulton inherently discloses Applicant's claimed compositions. Applicant reminds the Examiner that the standard for meeting inherent anticipation is demanding. As the United States Court of Appeals for the Federal Circuit ruled in Electro Sys. S.A. v. Cooper Life Sciences, 34 F.3d 1048, 1052 (Fed. Cir. 1994):

> The mere fact that a thing *may result* from a given set of circumstances is insufficient to prove anticipation. (citations omitted; emphasis original).

Rather, one asserting inherent anticipation must prove that the claimed features are:

> necessarily present [in the prior art reference] and that it would be so recognized by persons of ordinary skill. (Id.).

Furthermore, there is there no suggestion to modify Moulton to provide such compositions. Rather, whereas the pending claims cover materials that can form an adhesive bond having a shear strength of greater than 200 psi and that have a certain level of ionic

conductivity (e.g., so that the adhesive bond ***weakens*** under conditions of electrical current), Moulton is concerned with providing an adhesive material that can ***strengthen*** adhesion under conditions of electrical current. (See, e.g., id. col. 2, lines 19-35). Moreover, whereas Moulton is concerned with preparing materials having certain ***electronic conductivity*** properties, the materials covered by the pending claims require particular ***ionic conductivity*** properties. As known to those skilled in the art, these can be two very different problems. Thus, one skilled in the art would have never considered Moulton in the first place, and even if one skilled in the art did somehow consider Moulton, that person would not have been motivated to modify Moulton's compositions to provide the compositions covered by the pending claims.

The Examiner referred to the Koga patent, apparently to support the idea that it is known that charge/discharge cycles weaken interfacial adhesion between the current collector and the electrode layer. However, the portion of Koga referred to by the Examiner (col. 1, lines 39-52) seems to relate to reduction in adhesion between a polymer binder and a thin metal foil when exposed to repeated current cycles. There does not appear to be any reference to the polymer binder containing an electrolyte (the electrolyte is described as being external to the polymer binder by virtue of the fact that the electrode, which is partially formed of the polymer binder, has its surface area increased to increase the contact area between the electrode and the electrolyte) (lines 25-27), so, even if the polymer binder were construed to correspond to the claimed "matrix functionality," Koga would still seem to be irrelevant because Applicant's claimed compositions require an electrolyte/electrolyte functionality.

In view of the foregoing, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. §103.

Applicant notes that one of the 1449 Forms attached to the Office Action was not initialed by the Examiner. Applicant believes the 1449 Form relates to paper 12 in the PTO version of the prosecution history of the subject application. Applicant respectfully requests the Examiner to consider the reference listed in this 1449 Form (Weinberg, U.S. Patent No. 3,679,534), if the Examiner has not already done so, and to provide an initialed copy of this 1449 to Applicant.

Applicant further notes that the Information Disclosure Statement originally mailed by Applicant on September 17, 2002, does not appear to have been considered by the Examiner because the corresponding 1449 Form was not attached to the Office Action. Applicant is therefore re-submitting this Information Disclosure Statement for consideration by the Examiner.

Applicant believes the application is in condition for allowance, which action is requested. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 9/18/03

Sean P. Daley
Reg. No. 40,978

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

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